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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,537	10/23/2001	Curtis D. Mowry	SD6790/S96443	4708

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Sandia National Laboratories
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EXAMINER

CROSS, LATOYA I

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,537

Applicant(s)

MOWRY ET AL.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 and 21-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-33 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10/23/01. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-6, drawn to a micropyrolyzer, classified in class 250, subclass 288.
 - II. Claims 7-20, drawn to a method for pyrolyzing a sample for analysis, classified in class 436, subclass 155.
 - III. Claims 21-33, drawn to an analyzer, classified in class 422, subclass 68.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the pyrolyzer may be used in a different method of use, such as in separating non-volatile components of a sample from volatile components.
3. Inventions II and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the analyzer may be used in a method other than pyrolyzing, such as for analyzing samples.
4. Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case

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the different inventions, the two apparatus have different structural features, therefore, they have different modes of operation.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and the search required for Groups I and III is not required for Group II, restriction for examination purposes as indicated is proper.

7. During a telephone conversation with Kevin Bieg on December 5, 2003 a provisional election was made without traverse to prosecute the invention of group II, claims 7-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-6 and 21-33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 7, 8, 10-13 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,408,125 to Meuzelaar.

Meuzelaar teaches a method for pyrolyzing a sample. The method comprises taking microgram quantities of solid, liquid or gas sample of a chemical composition to be analyzed and dissolving or suspending the sample in an appropriate solvent, as recited in claim 8 (col. 8, lines 21-28). The solvent is considered to be a reagent. The sample is placed on a ferromagnetic wire which is placed inside the reaction chamber of a pyrolyzer. The sample is heated to a temperature up to 500°C, depending on the type of analysis being performed (col. 9, lines 23-26), as recited in claim 13. The sample is rapidly pyrolyzed by quickly heating the wire at a frequency of several hundred thousand to several million cycles per second (col. 9, lines 49-64). Meuzelaar further teaches that the heating is accomplished in a matter of milliseconds (col. 10, lines 1-9). Lastly, the product of the pyrolysis (vapor product) is removed through an exit outlet for analysis, as recited in claim 20 (col. 10, lines 9-12).

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be anticipated, within the meaning of 35 USC 102(b) in view of the teachings of Meuzelaar.

11. Claims 7, 9, 15 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 5,550,062 to Wohltjen et al.

Wohltjen et al teach a method of chemical detection by pyrolysis. The method comprises introducing a sample into a pyrolysis zone of a pyrolyzer, heating the sample up to 300°C, allowing the sample to be pyrolyzed and to yield pyrolysis products (vapors). Next, the

vapors are removed and introduced into a detection zone for analysis (col. 14, lines 34-54).

With respect to claim 9, Wohltjen et al teach using sample concentrations on the order of less than 1 microgram (Table 1). With respect to claim 15, the reference teaches drugs, such as cocaine, as the sample (col. 9, lines 25-27).

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be anticipated, within the meaning of 35 USC 102(b) in view of the teachings of Wohltjen et al.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 7, 8 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,627,881 to Bertrand et al in view of Applicants' admitted prior art.

Bertrand et al disclose the detection and identification of microorganisms. The process involves pyrolysis, where the sample is rapidly heating to a high temperature (col. 1, lines 44-45 and lines 50-51). Bertrand et al disclose that the pyrolysis takes place in a chamber of a

pyrolyzer (col. 2, lines 36-38). The reference discloses that in detection of microorganisms, the microorganisms are rapidly heated to a high temperature that leads to the thermal breakdown of the sample, thus generating second products (vapor products) that are used as markers for identification of microorganisms. The vapor products are methyl esters of fatty acids.

Bertrand et al differ from the instantly claimed invention in that there is no teaching of adding reagents to the sample, as recited in claims 8 and 17-19. Applicants admit at page 13 that a common solution to the problem of microorganism detection is to use derivatization reagents to increase the volatility of the fatty acids. Applicants admit that the reagents recited in claims 17-19 are commonly used as derivatization reagents. Thus, it would have been obvious, to one of ordinary skill in the art to add a reagent to a fatty acid sample for detection of microorganisms to increase the volatility of the fatty acids and allow the pyrolysis process to occur more rapidly.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be obvious, within the meaning of 35 USC 103 in view of the teachings of Bertrand et al and Applicant's admitted prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 703-305-7360. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 703-308-4037. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. The Examiner

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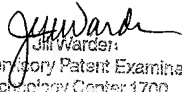
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is scheduled to relocate to a new office on December 17, 2003. As of that date, the Examiner may be reached at (571) 272-1256.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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December 11, 2003


Jill Ward
Supervisory Patent Examiner
Technology Center 4700